

# KURTIS & ASSOCIATES, P.C.

SUITE 600  
2000 M STREET, N.W.  
WASHINGTON, D.C. 20036

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(202) 328-4500  
TELECOPIER (202) 328-1231

## **Report to the Federal Communications Commission on Carrier Efforts Toward Attaining Digital TTY Accessibility, and the Status of the Various Technological Solutions, as Provided by CC Docket No. 94-102, In the Matter of Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems**

Northwest Missouri Cellular Limited Partnership ("Northwest Missouri"), by its attorneys, pursuant to the Federal Communications Commission's ("Commission") *Fourth Report and Order* in CC Docket No. 94-102,<sup>1</sup> hereby files a Quarterly Report for the quarter ending September 30, 2001, detailing its efforts towards attaining digital TTY accessibility, and the status of the various technological solutions that will help it attain that goal.

In the *Fourth Report and Order* the Commission established December 31, 2001 as the new deadline for carriers operating digital wireless systems to have obtained all software upgrades and equipment necessary to make their systems capable of transmitting 911 calls from TTY devices. It further established June 30, 2002 as the deadline for carriers to integrate, test and deploy the technology in their systems in conjunction with the public safety community. In order to be assured that the aforementioned deadlines will be met without complication, the Commission required digital wireless carriers to submit Quarterly Reports fifteen days after the end of each quarter.<sup>2</sup> Northwest Missouri now files this instant report with the Commission.

### **I. Carrier Background**

Northwest Missouri provides analog and digital CMRS wireless service in the Missouri 1-Atchison RSA.<sup>3</sup> Northwest Missouri intends to do everything within its power to comply with the requirements of 20.18(c) of the rules, to provide hearing-impaired persons with TTY access via the 911 dialing code over its digital wireless network. However, the ability for TTY devices to actually transmit calls over the TDMA digital portion of Northwest Missouri's network is wholly dependent upon the availability of the required infrastructure hardware and software and compatible handsets in sufficient time to meet the Commission's deadline. Northwest Missouri respectfully submits that these items are both beyond Northwest Missouri's control. Accordingly, Northwest Missouri has requested information and a status update from its network infrastructure and handset providers regarding their ability to meet the Commission's deadlines.

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<sup>1</sup>In the Matter of Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems, *Fourth Report and Order*, CC Docket No. 94-102, 15 Fcc Rcd 25216, 65 Fed. Reg. 82293 (December 28, 2000), ("*Fourth Report and Order*").

<sup>2</sup>*Id.*

<sup>3</sup>Station KNKN816 (CMA5041).

## **II. Access to E911 Through TTY Devices**

### **A. Development Activities**

Northwest Missouri does not own its own switch. Rather, Northwest Missouri obtains switching services from Cingular Wireless LLC's ("Cingular") switch in Kansas City, MO to switch Northwest Missouri's Lucent Technologies ("Lucent") TDMA infrastructure cell site equipment. Presently, Northwest Missouri understands that the requisite software which the Commission's rules require to be in place by December 31, 2001, will be hosted on the Cingular switch and not the network infrastructure owned and operated by Northwest Missouri. Northwest Missouri has made inquiries to both Cingular and Lucent regarding the status on their progress in achieving full compliance with the Commission's rules for the Northwest Missouri infrastructure. In response to Northwest Missouri's inquiry, Lucent has provided a status update on its progress in achieving full compliance with the Commission's rules. Lucent's response is appended hereto as **Exhibit A** and Cingular's response is appended hereto as **Exhibit B**. Northwest Missouri is not independently capable of verifying the information presented below, but has no reason to believe that it is not accurate.

Even once the network infrastructure is in place, Northwest Missouri understands that the ability to actually allow 911 access to TTY devices will also be contingent upon the availability of compatible handsets. While Northwest Missouri provides service to a number of brands of certified handsets owned by its subscribers and roamers entering its market, Northwest Missouri's primary handset providers for subscriber equipment sold by Northwest Missouri are Nokia and Motorola. Northwest Missouri has requested that Nokia and Motorola provide information on their progress in achieving full compliance with the Commission's rules with its TDMA handsets. Motorola's response is appended hereto as **Exhibit C**. Northwest Missouri is not independently capable of verifying the information presented therein, but has no reason to believe it is not accurate. As of this date, the only response Northwest Missouri has received regarding Nokia is from its handset distributor advising that "Nokia handsets being sold to Northwest Missouri Cellular, as the FCC acknowledges, do not pass the TTY data with an acceptable error rate." Northwest Missouri has not yet received a detailed response directly from Nokia, and therefore cannot report on its development activities. In the past, however, Nokia provided this information directly to the Commission in its own quarterly report. Northwest Missouri presumes that Nokia will follow the same procedure for this quarter. The appended Motorola information is respectfully submitted in response to these issues, as required in the Commission's *Fourth Report and Order* (rel. Dec 14, 2000).

- (1) *Network Infrastructure Software Development*
- (2) *Handset Development and Testing Plans*
- (3) *Beta Testing and Lab Testing*
- (4) *Release and General Availability to Carriers of Network Infrastructure Software*
- (5) *Availability to Carriers of Full Acceptance Test Units*
- (6) *Efforts Toward Achieving Digital Wireless Solution Compatibility With Enhanced TTY Devices*

**B. Testing and Deployment Activities**

Once the Cingular system has been upgraded to provide the requisite functionality and compatible handsets become available, Northwest Missouri will perform the appropriate tests. The specific details of a time line to implement 911 access to TRS via TTY devices over the digital wireless network, and other issues related to such implementation, including handset development and testing, are beyond the scope of information which Northwest Missouri can provide. Such questions are more appropriately addressed by equipment vendors because the equipment vendors, and not the licensees, are directly involved in developing compliant equipment. The Lucent and Motorola responses address these issues, as set forth in the Commission's *Fourth Report and Order*.

Because of the lack of available infrastructure hardware and software and compatibly handsets, Northwest Missouri has yet to undertake any testing and development activities.

- (7) *Carrier Coordination of Testing With PSAP*
- (8) *Carrier Testing Activities, Including Field Testing, Consumer End-to-end Testing, and Other Necessary Tests*
- (9) *Retail Availability of Necessary Consumer Equipment*
- (10) *Geographic Scope of Network Infrastructure Deployment*

**III. Conclusion**

As soon as the issues surrounding TTY access over digital networks are resolved, and assuming they are completed in a timely manner, Northwest Missouri intends to promptly and fully comply with the requirements of the *Fourth Report and Order*, to test and deploy the technology in its system in conjunction with the public safety community by June 30, 2002. Because the December 31, 2001 deadline appears to apply only to software required on the network switch owned by Northwest Missouri's switching vendor, it does not appear as though this deadline for implementing this software is directly applicable to the Northwest Missouri network nor is it within Northwest Missouri's control. As required, Northwest Missouri will provide the Commission with quarterly updates on the status of development and deployment, as advised by Northwest Missouri's infrastructure, handset and switching service vendors and, if

necessary, will seek a waiver of the applicable deadlines if the requisite equipment and software does not actually become available in sufficient time to enable Northwest Missouri to meet the deadlines.

Respectfully Submitted,

Northwest Missouri Cellular Limited Partnership

October 15, 2001

/s/ Michael K. Kurtis

Michael K. Kurtis

Anna E. Ward

*It's Attorneys*

Kurtis & Associates, P.C.  
2000 M Street, N.W.  
Suite 600  
Washington, D.C. 20036  
(202) 328-4500

## **EXHIBIT A**



October 12, 2001

Re: Revision of the Commission's Rules To Ensure Compatibility with  
Enhanced 911 Emergency Calling Systems, CC Docket 94-102, TTY  
Compatibility with Digital Wireless Systems

Lucent Technologies Inc. ("Lucent") is an active participant in the TTY Forum, which is developing standards to ensure compatibility between digital wireless systems and TTY devices.

Lucent has completed the development of 911 TTY (TDMA), however the mobiles that are available in the market are not stable as yet thus we have not been able to complete our testing. Once stable mobiles are available Lucent will complete the testing and provide the solution to our customers.

Lucent is strongly committed to developing TTY solutions for our products and will continue working towards this goal. If you have any questions, please contact me at (630) 979-8845.

Sincerely,

Curtis A Miller  
Sr Mgr Network Product Mgmt

## **EXHIBIT B**

September 17, 2001

To: TTY Forum

From: Susan Palmer and Ken Evans

TTY Forum #19 Report  
Cingular Wireless LLC

## Overview

Cingular Wireless LLC (Cingular) is satisfied with the progress that has been made since the last Forum. Communications amongst all parties continues to improve. We have conducted testing in the TDMA environment on the proposed solutions for the technical problems highlighted in our July Report. Using total character error rate (TCER) as a measure, the results to date have been favorable. Our manufacturers have indicated delivery of handsets will be timely, however, it should be noted that we had difficulty obtaining TTY ready handsets for testing purposes.

Cingular has conducted testing with three different handset vendors. Handset performance varies from vendor to vendor. However, all handsets tested to date have yielded acceptable results. Cingular is concerned that any delays in the availability of TTY compatible handsets could frustrate customers and delay implementation of a viable TTY solution.

At this point, we do not have the equipment necessary for testing GSM technology in our labs or network. We have been assured that equipment will be delivered to us by early November. The lack of GSM testing remains a concern. It is possible that unforeseen technical issues could exist. However, Cingular is committed to work together with manufacturers and consumers to resolve any technical issues.

In addition to technical issues, to have effective TTY access, supporting documentation and information regarding handset and handset connectivity must be given to service providers in time to develop appropriate customer care and sales support. Methods and procedures must be developed to ensure that TTY compatible handsets and cables are available to customers in a timely fashion. If it appears that a low volume of units will be available initially, manufacturers, service providers and representatives of the Deaf community should work proactively to address this issue.

## TDMA

Cingular Wireless has conducted individual and joint testing (with TTSI) of the No Gain solution in Ericsson and Lucent switches. The results have yielded a total character error rate that is similar to results obtained in analog environments. Additional testing is needed to insure various mobile scenarios yield acceptable results.

Cingular is in the process of finalizing an implementation schedule that will result in first office application (FOA) and some commercial deployments prior to the end of the year. However, handset availability may limit testing in our FOA sites.

## GSM

Cingular plans to begin testing GSM infrastructure software for the CTM solution in mid November. The same concerns described regarding the availability of handsets for infrastructure testing in the TDMA environment are applicable for GSM.

## Conclusion

Cingular Wireless notes that progress was made last quarter toward resolving many of the technical issues highlighted in the July Report. However, there might still be technical issues that have not been diagnosed, particularly in the GSM environment, because technologies have not been fully tested. Handset availability continues to delay this process and availability of handsets will be a critical part of providing TTY access to consumers. The cooperation noted this quarter must continue in order to meet the June 2002 deadline.

## **EXHIBIT C**

**MOTOROLA**  
**TTY COMPATIBILITY DEVELOPMENT STATUS REPORT**  
**3<sup>rd</sup> Quarter 2001**

<b>Product</b>	<b>Standard</b>	<b>Status</b>	<b>Milestones</b>	<b>Progress</b>
CDMA Handset	IS 127-3 IS 733-2	Integration & System Test	IOT: June 2001 UI: October 2001 ROM: December 2001 SA: 1Q 2002	Planning to participate in November ATIS testing with Sprint.
GSM Handset	TS 26.226 TS 26.230 TR 26.231	Integration & System Test	UI: October 2001 IOT: October 2001 ROM: December 2001 SA: 1Q 2002	Mobile to Mobile calls are functional. Optimization activities are on-going. IOT will start in October.
iDEN Handset		Beta in customer's lab	On plan	
TDMA Handset	IS 823-A IS 840-A	Integration & System Test	IOT: September 2001 UI: September 2001 ROM: October 2001 SA: 1Q 2002	Tested at AWS in Naperville, IL using Lucent Infrastructure. Tested both AMPS and TDMA.
CDMA Infrastructure	IS 127-3 IS 733-2	Ready for FOA	Field Testing: Nov 13-15, 2001	Infrastructure software in field has digital TTY support available now. Only handsets are needed to commence FOA.
iDEN Infrastructure		Beta in customer's lab	On plan	

Note: Motorola works with its carrier customers to provide them specific information related to their respective products.

Note: IOT is Inter Op Testing with RAM based parts for Character Error Rate testing  
UI is User Interface testing with HCO / VCO support  
ROM is the availability of ROM based phones. These should be functionally identical to a RAM phone.  
SA is Ship Acceptance of production volume quantities

Al Lucas  
Office of Access Excellence  
Motorola  
Phone: 561-739-2505  
TTY: 561-739-2506

CERTIFICATE OF SERVICE

I, Carol A. Mindzak, a secretary with the law firm of Kurtis & Associates, P.C., do hereby certify that I have this 15<sup>th</sup> day of October 2001, filed the foregoing “REPORT TO THE FEDERAL COMMUNICATIONS COMMISSION ON CARRIER EFFORTS TOWARD ATTAINING DIGITAL TTY ACCESSIBILITY, AND THE STATUS OF THE VARIOUS TECHNOLOGICAL SOLUTIONS, AS PROVIDED BY CC DOCKET NO. 94-102, IN THE MATTER OF REVISION OF THE COMMISSION’S RULES TO ENSURE COMPATIBILITY WITH ENHANCED 911 EMERGENCY CALLING SYSTEMS” electronically with the Federal Communications Commission’s Electronic Comment Filing System. I have also filed a diskette copy of this report with the Federal Communications Commission’s copy contractor, Qualex International. In addition, on this date, I have served copies of this Report via hand delivery or e-mail to the following:

Magalie Roman Salas, Secretary  
Office of the Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W., Room TW-A325  
Washington, D.C. 20554

Kris Monteith, Chief  
Policy Division  
Wireless Telecommunications Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W., Room 3-C124  
Washington, D.C. 20554

Pam Gregory, Chief  
Disabilities Rights Office  
Consumer Information Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W., Room 6-C415  
Washington, D.C. 20554

Melinda S. Littell\*  
Wireless Telecommunications Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W., Room 3-A161  
Washington, D.C. 20554  
[mlittell@fcc.gov](mailto:mlittell@fcc.gov)

/s/ Carol A. Mindzak

Carol A. Mindzak

\* Sent via e-mail